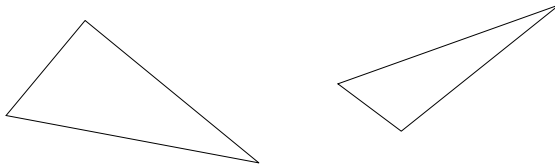


Use Similar Triangles to Solve Problems

Date: _____

EX: If $\triangle CDE \sim \triangle FHG$ find the lengths of the missing sides.



Similar Triangles and Area

If $\triangle ABC \sim \triangle PQR$

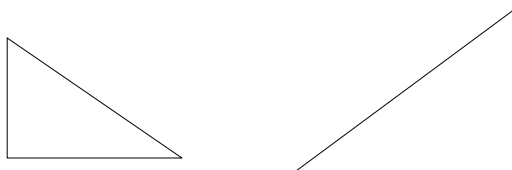
$$\frac{a}{p} = \frac{b}{q} = \frac{c}{r} = k \quad \text{where } k \text{ is the "scale factor".}$$

How are the areas of similar triangles related???

The ratio of the areas of two similar figures is equal to the square of the scale factor.

$$\text{That is} \quad \frac{\text{Area of } \triangle ABC}{\text{Area of } \triangle PQR} = k^2$$

EX: Find AC and EF.
Find the scale factor k .
Find the area of $\triangle ABC$ and $\triangle DEF$ and confirm the square of the scale factor relates the areas of $\triangle ABC$ and $\triangle DEF$.



EX: If $\triangle ABC \sim \triangle DEF$, $AB = 24\text{cm}$, $DE = 18\text{cm}$ and $\triangle ABC$ has an area of 128cm^2 , find the area of $\triangle DEF$.